

INFRARED MEASUREMENT SYSTEMS MOBILE INSTRUMENTATION TRUCK



The Infrared (IR) Measurement Systems Mobile Instrumentation Truck contains all instrumentation and support equipment for the acquisition of IR signature data for survivability/vulnerability analysis or system surface thermal analysis. Data acquisition is possible from test stand engines, aircraft in on-ground or hover operation or aircraft subsystems.

Self-contained mobile instrumentation system

Primary acquisition instrumentation consists of a CI Systems SR5000 Spectroradiometer (1.3 to 14.5 microns) and an AGA Thermovision Thermal Imaging System (2.0 to 5.6 and 8 to 12 microns).

Test Vehicle Maximum Dimensions:

- Truck dimensions: 35x8.5x12 ft
- Gross Vehicle Weight: 32000 lbs
- Generator: 30 kW

CI Systems SR-5000 Spectroradiometer:

This is a PC supported spectroradiometer system incorporating an indium antimonide/mercury cadmium telluride sandwich detector package. The system utilizes a four segment circular variable filter wheel covering 1.3 to 14.5 microns.

AGA 780 Thermovision System:

This is a dual band thermal imaging system covering the 2.0 - 5.6 and 8.0 - 12.0 micron bands. The system utilizes color and black-and-white monitors with color or black-and-white hard copy output and black-and-white videotape output. Thermal images are digitized with a Thermovision OSCAR-Pericolor digital image processor and stored on tape or disk.

CI Systems SR-5000 Spectroradiometer

Optics:

Type	Newtonian
Aperture	5 inch
FOV	12 milliradian (0.75 degree) (optional 10, 8, 4, 8, 3, 2, 1 or 0.5 milliradian)

Detectors:

Material	InSb/HgCdTe (sandwich)
Oper. Temp.	LN2

Response: 1.3 to 14.5 microns

Filters: CVF contains four segments

Bandwidth: 1.8% of the instantaneous wavelength

Dynamic Range: 10 exp 6

Scan Rates: 0.5 to 64 seconds

Chopping Freq:

Variable	50-1000 Hz.
Optional	850 Hz

Physical Dimen.: 8.25x14x27 inches

Data Processing Capabilities:

- CI System Spectroradiometric Data: Custom PC software package which provides integrated data for selected spectral bands, spectral plots, and tabulated spectral data.
- AGA Thermovision: Combination of manufacturer and custom software which provides color or black-and-white hard copy images with temperature scales. Optional output format is a black-and-white thermal imaging video without temperature scales.
- Classified data processing will be conducted off-line at NAWCAD Patuxent River, MD.

Unique Features:

- ProSurvey 1000 Lidar System - eyesafe laser rangefinder
- Onboard weather station - wind speed, wind direction, humidity, temperature
- Motorola Proteus/URC-200 UHF /VHF Transceiver
- Instrumentation tracking pedestal with video camera system

Accomplishments:

Installed and uninstalled engine tests have been conducted at: NAWCAD Trenton, NJ and NAWCAD Lakehurst, MD. Aircraft tests have been conducted at NAWCAD Patuxent River and contractor facilities. *Customers* have included the Navy, Army, engine contractors, airframe contractors, and subsystem contractors.

For more information about the Infrared Measurement Systems Mobile Instrumentation Truck, contact Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-757-0433.

AGA 780 Thermovision System

Lenses: 3.5 degree or 7.0 degree FOV

Filters: Band Limiting Filters: 3.5 to 4.0 and 3.5 to 5.6

Detectors: InSb and HgCdTe

Oper. Temp.: LN2